AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-29. (Cancelled)

30. (New) A process for conditioning water in a contained environment for aquatic life, the process comprising the steps of:

flowing an amount of the water from the contained environment to a first apparatus for substantially reducing the oxygen concentration of the water in the flow;

flowing the water from the first apparatus to a second apparatus containing anaerobic bacteria for substantially reducing the level of nitrates in the water; and

flowing the water from the second apparatus to the contained environment.

31. (New) The process of claim 30 wherein the first apparatus comprises a first chamber containing a first media supporting sufficient aerobic bacteria to substantially reduce the oxygen content in the water as the water flows through the first chamber.

32. (New) The process of claim 31 wherein the first chamber reduces the oxygen content of the water to a level of less than 2 ppm.

33. (New) The process of claim 31 wherein the first chamber reduces the oxygen content of the water to a level of less than 1.64 ppm.

34. (New) The process of claim 31 wherein the second apparatus comprises a second chamber containing a media of sulfur which supports sufficient anaerobic bacteria to substantially reduce the nitrate content in the water, as the water flows through the second chamber.

35. (New) The process of claim 34 wherein the second chamber reduces the nitrate content of the water to a level ranging from 0 to 20 ppm.

36. (New) The process of claim 34 further comprising the additional step of adding calcium to the water by flowing the water having reduced levels of nitrates to a third apparatus containing one or more sources of calcium before the water flows to the contained environment.

37. (New) The process of claim 36 further comprising the step of degassing the flow of water before the water flows back to the contained environment.

38. (New) The process of claim 34 wherein the anaerobic bacteria comprise *Thiobacilus denitrificans* bacteria.

39. (New) The process of claim 38 where the aerobic bacteria comprise at least one bacteria chosen from *nitrosomonas* and *nitrobacter* bacteria

40. (New) The process of claim 34 wherein the anaerobic bacteria comprise at least one bacteria chosen from *Thiobacilus denitrificans*, *Thiobacillus versutus*, *Thiobacillus thyasiris*, *Thiosphaera pantotropha*, *Paracoccus denitrificans*, and *Thiomicrospira denitrificans*.

41. (New) The process of claim 34 further comprising the steps of flowing the water through at least two sources of calcium after the water leaves the second chamber and before the water flows back to the contained environment.

42. (New) The process of claim 34 wherein the water is kept within a temperature range of 25 to 30 degrees Celsius as it flows through the second chamber.

43. (New) The process of claim 34 wherein the structure of the second chamber is opaque and designed to minimize the application of any light to the anaerobic bacteria in the second chamber.

44. (New) The process of claim 36 wherein the water flowing as it leaves the third apparatus has a pH within the range of from about 6 to about 8.

45. (New) The process of claim 34 further comprising the step of adding oxygen to the water after the water flows from the second chamber and before the water flows back to the contained environment.

46. (New) The process of claim 34 further comprising the additional step of flowing the water from the second chamber to a protein skimmer before the water flows to the contained environment.

47. (New) The process of claim 46 wherein the protein skimmer both raises the pH and adds oxygen to the water.

48. (New) The process of claim 46 wherein the protein skimmer mixes a gas including oxygen with water in the chamber using a mixing eductor.

49. (New) The process of claim 34 further comprising the step of flowing the water through a degassing chamber of activated carbon after it leaves the second chamber and before the water flows back to the contained environment.

50. (New) The process of claim 49 wherein the degassing chamber contains wet activated carbon immersed in the flow of water and dry activated carbon above the flow of water.

51. (New) The process of claim 30 further comprising the additional step of flowing the water having reduced levels of nitrates to an oxytower before the water is returned to the environment for holding aquatic life, wherein the

oxytower includes an enclosure for accepting a flow of water, the enclosure having side walls that slope inward at an angle θ_{oxy} from vertical; a medium is placed on the inner surface of the sidewalls and serves as support for the growth of algae in the oxytower, and the water flows down the side walls while contacting the algae in a manner which allows the algae to effectively remove contaminants from the water and raise the pH of the water.

52. (New) The process of claim 34 further comprising the step of reducing the sulfate concentrations in the water after it leaves the second chamber and before the water flows back to the contained environment.

53. (New) The process of claim 52 wherein the step of reducing the sulfate concentrations is achieved by introducing the water to a desulfator, wherein the desulfator includes an enclosure for accepting a flow of water, wherein the enclosure contains a media on which anaerobic photosynthetic bacteria are supported, and the water flows through the enclosure while contacting the media in a manner which effectively reduces sulfate levels.

54. (New) The process of claim 53, wherein the bacteria comprise at least one bacteria chosen from Chromatium vinossum, Thiospirillum jenense, Rhodospirillum rubrum, Rhodobacter sphaeroides, Chlorobium limicola, and Prosthecochloris aestuarii.

55. (New) The process of claim 30, wherein the second apparatus comprises a plurality of chambers for reducing the level of nitrates in the water.

56. (New) A system for conditioning water in a contained environment for holding aquatic life, the system comprising

a first chamber in fluid communication with the contained environment and containing a first media capable of supporting aerobic bacteria that can substantially reduce the oxygen level of water flowing from the contained environment; and

a second chamber in fluid communication with both the first chamber and the contained environment in a manner which allows the water having a substantially reduced oxygen level to flow from the first chamber to the second chamber, and the water leaving the second chamber to flow back to the contained environment, the second chamber containing a second media comprising sulfur capable of supporting *thiobacilus denitrificans* bacteria that can substantially reduce the level of nitrates in the water.

57. (New) The system of claim 56, wherein the system includes an opaque covering material over the second chamber, which material reduces the amount of light incident on the second media.

58. (New) The system of claim 56, wherein a conduit provides the fluid communication between the contained environment and the first chamber, at least a portion of the conduit being transparent so as to allow observation of water flowing into

the system, and a gate valve associated with the conduit allows for adjusting the flow rate of water through the conduit.

59. (New) The system of claim 56, wherein a conduit provides the fluid communication between the second chamber and the contained environment, at least a portion of the conduit being transparent so as to allow observation of the flow of water in the conduit.

60. (New) The system of claim 56, further comprising a third chamber in fluid communication with both the second chamber and the contained environment in a manner which allows water to flow from the second chamber to the third chamber before returning to the contained environment, wherein the third chamber contains a first calcium source.

61. (New) The system of claim 60, further comprising a fourth chamber in fluid communication with both the third chamber and the contained environment in a manner which allows water to flow from the third chamber to the fourth chamber before returning to the contained environment, wherein the fourth chamber contains a second calcium source.

62. (New) The system of claim 61, wherein said first, second, third and fourth chambers are contained in a single container, the container having an inlet and an outlet allowing fluid communication with the contained environment and the chambers in the container.

63. (New) The system of claim 62, wherein the container is a box-shaped container having four sides, a top and a bottom, the container is divided into four volumes by vertical dividing walls to form said first, second, third and fourth chambers, and openings are positioned in said dividing walls to allow water to flow from one chamber to the next.

64. (New) The system of claim 62, wherein

each of said first, second, third and fourth chambers is divided into an upper section, a middle section, and a lower section, by first and second perforated shelves positioned within each of the chambers, so that said first shelf is positioned horizontally within the chambers to separate the upper section from the middle section, and the second shelf is positioned horizontally within the chamber and below the first shelf so as to separate the middle section from the lower section;

and further wherein the upper section of each chamber contains carbon, the middle section of each of said first, second, third and fourth chambers respectively contains the first media, the second media, the first calcium source and the second calcium source, and the lower section of each of said first, second, third and fourth chambers remains substantially empty except for the flow of water therethrough.

65. (New) The system of claim 62, wherein the inlet and outlet of the container and the openings in the dividing walls are positioned so that water is capable of entering the container near the top of the middle section of the first chamber and flowing down through the media in the first chamber and into the lower section of the second chamber

through openings in a dividing wall separating said first and second chambers, then flowing upward through the media in the second chamber and into the middle section of the third chamber through openings formed in a dividing wall separating the second and third chambers, then flowing down through the media in the third chamber and into the lower section of the fourth chamber through openings in a dividing wall separating the third and fourth chambers, then flowing upward through the media in the fourth chamber and exiting the container through the outlet.

66. (New) A system for conditioning water in a contained environment for holding aquatic life, the system comprising

a first chamber, a second chamber, and a third chamber in fluid communication with the contained environment in a manner which allows water to flow from the contained environment to the first chamber, from the first chamber to the second chamber, from the second chamber to the third chamber and from the third chamber back to the contained environment; and wherein

the first chamber contains a first media comprising sulfur which is capable of supporting *thiobacilus denitrificans* bacteria that can substantially reduce the level of nitrates in the water;

the second chamber contains a first calcium source; and

the third chamber contains a second calcium source different from the first calcium source.

67. (New) The system of claim 37, the system further comprising a degassing chamber in fluid communication with both the third chamber and the contained environment in a manner which allows water to flow from the third chamber to the degassing chamber before returning to the contained environment.

68. (New) A system for conditioning water in a contained environment for holding aquatic life, the system comprising

a first chamber in fluid communication with the contained environment and containing a media comprising sulfur which is capable of supporting *thiobacilus denitrificans* bacteria that can substantially reduce the level of nitrates in the water; and

a degassing chamber in fluid communication with the first chamber and the contained environment for degassing the water.

69. (New) A system for conditioning water in a contained environment for holding aquatic life, wherein the system is contained in a single container partitioned into chambers by perforated dividing walls arranged inside the container, the system comprising

a first chamber having an inlet in fluid communication with the contained environment, for accepting a flow of water from the contained environment;

a second chamber in fluid communication with the first chamber, wherein said second chamber contains a first media comprising sulfur which is capable of supporting

thiobacilus denitrificans bacteria that can substantially reduce the level of nitrates in the water;

a third chamber in fluid communication with the second chamber, wherein the third chamber contains a calcium source; and

a fourth chamber in fluid communication with the third chamber, the fourth chamber having an outlet for allowing the flow of water back to the contained environment;

wherein the chambers are arranged inside the container in a manner which allows for water entering the system through said inlet in the first chamber to flow through perforations in the dividing walls to the second, third and fourth chambers, in that order, and thereafter to exist the system through the outlet in the fourth chamber.

70. (New) The system of claim 69, wherein said first and fourth chambers are substantially empty of added media in order to allow water to flow freely through the first and fourth chambers.

71. (New) The system of claim 69, wherein the outlet comprises an outlet pipe which extends vertically down into the fourth chamber, and wherein the system further comprises a device for forcing air into the outlet pipe so that the air will rise up through the outlet pipe in a manner which will force water out of the system.

72. (New) The system of claim 69, wherein the calcium source comprises at least two different sources of calcium.

73. (New) The system of claim 69, wherein

the container has sidewalls, a bottom and a top and wherein the perforated dividing walls are arranged vertically within the container so as to partition the container into separate chambers;

and further wherein additional first and second horizontal, perforated dividing walls are positioned horizontally near the top of the container so that the first horizontal dividing wall forms the top of the first, second, third and fourth chambers, and the second horizontal dividing wall is positioned above, and parallel to the first horizontal dividing wall so as to form a top chamber over the first, second, third and fourth chambers; and further wherein the top chamber is filled with activated carbon.

74. (New) The system of claim 69, wherein the system includes a chamber containing a media capable of supporting sufficient aerobic bacteria to substantially reduce the oxygen content of the water before the water enters the second chamber.

75. (New) A system for conditioning water in a contained environment for holding aquatic life, wherein the system comprises:

a first chamber having an inlet in fluid communication with the contained environment for accepting a flow of water from the contained environment;

a second chamber in fluid communication with the first chamber and containing a first media capable of supporting sufficient aerobic bacteria to substantially reduce the oxygen content of the water entering the second chamber;

a third chamber in fluid communication with the second chamber and containing a second media comprising sulfur which is capable of supporting *thiobacilus denitrificans* bacteria to substantially reduce the nitrates in the water entering the third chamber;

a fourth chamber in fluid communication with the third chamber and containing a first calcium source;

a fifth chamber in fluid communication with the fourth chamber and containing a second calcium source; and

a sixth chamber in fluid communication with the fifth chamber and containing a media capable of removing undesirable contaminants from the water flowing therethrough;

wherein the chambers are arranged in a manner which allows for water entering the system through said inlet in the first chamber to flow to the second, third, fourth, fifth, and sixth chambers, in that order, and thereafter to return to the contained environment.

76. (New) The system of claim 75, wherein the media in the second chamber is biofilm.

77. (New) The system of claim 75, wherein the calcium source in the fifth chamber is less soluble than the calcium source in the fourth chamber

78. (New) The system of claim 75, wherein the system further comprises an additional chamber containing a media capable of removing undesirable contaminants.

79. (New) The system of claim 76, wherein the media capable of removing undesirable contaminants is activated carbon.

80. (New) An activated carbon chamber for removing contaminants from fluid streams, the chamber comprising

a container having both dry and wet activated carbon sections, the container having sides, a bottom and a top;

an inlet located below the top of the chamber for introducing a flow of water into the chamber, so that the portion of activated carbon in the chamber is located above the inlet to form a dry activated carbon section, and a portion of the activated carbon is located below the inlet and forms a wet activated carbon section; and

an outlet located below the inlet for allowing water to exit the chamber;

wherein water entering the chamber through the inlet flows down through the wet activated carbon section, whereby contaminants may be removed from the water, while gases escaping from the flow of water may rise through the dry activated carbon section, whereby the dry activated carbon may remove contaminants from the escaping gases.

81. (New) A system for conditioning aquarium water, the system comprising

a first chamber containing a first media capable of supporting aerobic bacteria that can substantially reduce the oxygen concentration of the aquarium water; and

an apparatus comprising one or more denitration chambers in fluid communication with the first chamber, wherein the denitration chambers contains a second media comprising sulfur which is capable of supporting *thiobacilus denitrificans* bacteria that can substantially reduce the nitrates in the aquarium water.

82. (New) The biological system of claim 81, wherein the one or more denitration chambers contain perforated shelves, and the second media rests on the shelves.

83. (New) The biological system of claim 81, wherein the one or more denitration chambers are cylindrical chambers having a bottom and top, the bottom having a conical shape for collecting sediment, wherein the one or more denitration chambers further comprise

an inlet through which water may flow into the chamber, and an outlet through which water may flow out of the chamber, the inlet and outlet being positioned so that water within the chambers flows in an upward direction; and

a gas outlet positioned in the top of the chambers through which gas exiting the chamber may flow.

84. (New) The biological system of claim 81, wherein the second media is in the form of balls comprising sulfur and a lightweight, buoyant material.

85. (New) The biological system of claim 84, wherein the balls have a density less than that of the water.

86. (New) The biological system of claim 81, wherein the system further comprises one or more calcium chambers.

87. (New) The biological system of claim 81, wherein the system further comprises one or more apparatuses chosen from a calcium chamber, a protein skimmer, a degassing tower, an oxytower and a desulfator.

88. (New) An oxytower, comprising

an enclosure for accepting a flow of water, the enclosure having side walls that slope inward at an angle θ_{oxy} from vertical;

a medium capable of supporting algae growth positioned on the inner surface of the sidewalls;

an inlet positioned above the medium for introducing water into the enclosure in a manner which allows the water to flow along the surface of the sidewalls while maintaining contact with the algae so that the algae can effectively remove contaminants from the water and raise the pH of the water; and

an outlet placed at the bottom of the enclosure which allows water to exit the oxytower.

89. (New) The oxytower of claim 88, wherein the side walls form a truncated cone shape and the inlet comprises a water channel positioned along the inside of the top circumference of the enclosure, the channel having a plurality of outlets through which water may be introduced into the enclosure.

90. (New) The oxytower of claim 88, wherein angle θ_{oxy} ranges from 5^{o} to 45^{o}.

91. (New) The oxytower of claim 88, wherein angle θ_{oxy} ranges from 10^{o} to 20^{o}

92. (New) The oxytower of claim 88, wherein the medium capable of supporting algae growth is in the form of a screen.

93. (New) The oxytower of claim 88, further comprising an artificial light source positioned in the tower for supplying sufficient light for photosynthesis and algae growth.

94. (New) The oxytower of claim 93, wherein the artificial light source includes multiple light bulbs positioned to provide optimum algae growth.

95. (New) A protein skimmer for removing contaminants from water processed therein, the protein skimmer comprising

a mixing chamber having an inlet for introducing a flow of water into the chamber;

a pump for generating a forced flow of water; and

a mixing eductor for mixing a gas including oxygen with water in the chamber, wherein the mixing eductor includes an inlet channel for introducing the forced flow of water from the pump into the chamber, a mixing channel having both a flared inlet region positioned near the inlet channel in a manner which allows water from inside the chamber to be entrained into the mixing channel and a flared outlet region through which a forced flow of water and bubbles is directed into the chamber, and a flow path for introducing the gas including oxygen from outside the chamber into the mixing channel to form a mixture of water and bubbles of the gas.

96. (New) The protein skimmer of claim 95, wherein the flow path for introducing the gas including oxygen is a tube positioned in the flow of water through the mixing channel at an angle θ_t from the central longitudinal axis of the mixing channel.

97. (New) The protein skimmer of claim 96, wherein the angle θ_t ranges from 0 to 90°.

98. (New) The protein skimmer of claim 96, wherein θ_t ranges from 30 to 60°.

99. (New) The protein skimmer of claim 96, wherein θ_t is 45°.

100. (New) The protein skimmer of claim 95, wherein the flow path for introducing the gas including oxygen is a tube positioned in the flow of water through the mixing channel so that the outlet of the flow path is located at or near the central longitudinal axis of the mixing channel.

101. (New) The protein skimmer of claim 95, wherein the flared outlet region ranges from about 1 inch to about 80 inches long.

102. (New) The protein skimmer of claim 95, wherein the flared outlet region ranges from about 20 to about 60 inches long.

103. (New) The protein skimmer of claim 101, wherein the flared outlet region flares out at an angle θ_f from the central longitudinal axis of the mixing channel, and further wherein the angle θ_f ranges from about 1° to about 60°.

104. (New) The protein skimmer of claim 103, wherein θ_f ranges from about 30° to about 45°.

105. (New) The protein skimmer of claim 95, further comprising one or more additional mixing eductors positioned in the mixing chamber.

106. (New) A mixing eductor comprising

an inlet channel for accepting a forced flow of fluid;

a mixing channel having a flared inlet region positioned near the inlet channel in a manner which allows a fluid surrounding the mixing eductor to

be entrained into the mixing channel and a flared outlet region through which the forced flow of fluid and entrained fluid is directed;

a flow path for introducing a gas in the form of bubbles into the mixing channel to form a mixture of the forced flow of fluid, the entrained fluid and the gas bubbles.

107. (New) The mixing eductor of claim 106, wherein the flow path for introducing the gas is a tube positioned in the flow of fluid through the mixing channel at an angle θ_t from the central longitudinal axis of the mixing channel.

108. (New) The mixing eductor of claim 107, wherein the angle θ_t ranges from 0 to 90°.

109. (New) The mixing eductor of claim 107, wherein θ_t ranges from 30 to 60°.

110. (New) The mixing eductor of claim 107, wherein θ_t is 45°.

111. (New) The mixing eductor of claim 106, wherein the flow path for introducing the gas is positioned in the flow of fluid through the mixing channel so that the outlet of the flow path is located at or near the central longitudinal axis of the mixing channel.

112. (New) The mixing eductor of claim 106, wherein the flow path for introducing a flow of gas comprises two or more tubes.

113. (New) The mixing eductor of claim 106, wherein the flared outlet region ranges from about 1 inch to about 80 inches long.

114. (New) The mixing eductor of claim 106, wherein the flared outlet region ranges from about 20 to about 60 inches long.

115. (New) The mixing eductor of claim 106, wherein the flared outlet region flares out at an angle θ_f from the central longitudinal axis of the mixing channel, wherein the angle θ_f ranges from about 1° to about 60°.

116. (New) The mixing eductor of claim 115, wherein θ_f ranges from about 30° to about 45°.

117. (New) The mixing eductor of claim 106, wherein the flow path for introducing the flow of gas comprises two or more tubes positioned in the flow of fluid through the mixing channel.

118. (New) The mixing eductor of claim 106, further comprising foils formed on the inner surface of the flared outlet region, wherein the foils rotate around the inside surface of the outlet region in a manner which directs the motion of fluid through the outlet region in a helical path, thereby creating a vortex.

119. (New) The mixing eductor of claim 118, wherein the foils extend a distance of about 1/16 inch to about 1 inch from the inner surface of the outlet region.

120. (New) A desulfator for reducing sulfate concentrations in water, comprising

a chamber for accepting a flow of water,

a media capable of supporting an anaerobic photosynthetic bacteria for reducing sulfur concentrations; and

a light source.

121. (New) The desulfator of claim 120, wherein the chamber is preferably a cylindrical shaped chamber having an outer cylindrical wall and an inner cylindrical wall concentrically arranged inside the outer cylindrical wall, wherein the media is contained between the outer and inner cylindrical walls.

122. (New) The desulfator of claim 121, wherein the walls of the chamber are transparent to light.

123. (New) The desulfator of claim 121, wherein the volume of the chamber containing the media is air tight, so as not to allow oxygen to enter therein.

124. (New) The desulfator of claim 121, wherein support media is transparent to light.

125. (New) The desulfator of claim 124, wherein the support media is biofilm.

126. (New) The desulfator of claim 121, wherein the light source is natural sunlight.

127. (New) The desulfator of claim 121, wherein the light source is artificial light.

128. (New) The desulfator of claim 127, wherein the artificial light has a spectrum ranging from 4000° K to 25000° K.

129. (New) The desulfator of claim 127, wherein the artificial light source comprises multiple lights positioned within the chamber to provide light throughout the chamber.

130. (New) The desulfator of claim 127, further comprising a system for reducing oxygen content of the water before the water enters the chamber.

131. (New) An aerobic bacteria chamber for reducing the concentration of oxygen in water, the chamber comprising a tank containing media capable of supporting aerobic bacteria, wherein the tank is sufficiently air tight to allow the level of oxygen in the water to be effectively reduced by the bacteria.

132. (New) The aerobic bacteria chamber of claim 131, wherein the lower portion of the tank has a tapered shape to allow for collection of sediment which settles to the bottom.

133. (New) The aerobic bacteria chamber of claim 132, wherein a drain and valve may be located on the bottom of the tank to allow sediment to be

periodically removed, and further wherein a clear section of pipe may be employed between the drain and the valve to allow visual inspection of the drain so that sediment buildup may be monitored.

134. (New) The aerobic bacteria chamber of claim 132, wherein a vent is placed in the top of the tank to vent gases from the chamber, and further wherein the vent incorporates a check valve so as to not allow substantial amounts of outside air into the chamber.

135. (New) The aerobic bacteria chamber of claim 132, wherein the media is chosen from sand, crushed coral and biofilm.

136. (New) A denitration chamber comprising

a tank having an inlet and an outlet for allowing water to flow through the chamber;

horizontal shelves spaced vertically one above another within the tank, the shelves being perforated so as to allow water to flow therethrough, and

a media comprising sulfur resting upon the shelves, wherein the media is capable of supporting *Thiobacilus denitrificans* bacteria for reduction of nitrates in the water.

137. (New) The denitration chamber of claim 136, wherein the tank is a cylindrical tank having a conical shaped bottom for collecting sediment.

138. (New) A denitration chamber comprising

an inlet through which water may flow into the chamber, and an outlet through which water may exit the chamber, the inlet and outlet being positioned so that water within the chamber flows in an upward direction through the chamber;

a gas outlet positioned in the top of the chamber through which gas exiting the chamber may flow; and

a media comprising sulfur which floats in the water, wherein the media is capable of supporting *Thiobacilus denitrificans* bacteria for reduction of nitrates in the water.

139. (New) The denitration chamber of claim 138, wherein the media is in the form of balls comprising sulfur and a lightweight, buoyant material.

140. (New) The denitration chamber of claim 138, wherein the media is in the form of hollow balls, the balls being filled with a mixture of sulfur media and plastic or Styrofoam media, and further wherein holes are positioned in the balls which are capable of allowing water to flow into and out of the balls and contact the sulfur media contained therein.

141. (New) A calcium chamber comprising

a tank having an inlet and an outlet for allowing water to flow through the chamber;

horizontal shelves spaced vertically one above another within the tank, the shelves being perforated so as to allow water to flow therethrough, and

a media comprising calcium resting upon the shelves.

142. (New) The calcium chamber of claim 141, wherein the calcium media is chosen from aragonite, calcite and dolomite.

143. (New) The calcium chamber of claim 141, wherein the inlet and outlet are positioned so that water flows into the chamber near the bottom of the chamber and flows upward to exit near the top of the chamber, and further wherein the harder to dissolve calcium is placed on the shelves closer to the inlet and the more easily dissolved calcium on the shelves closer to the outlet.

144. (New) The calcium chamber of claim 141, wherein the tank is a cylindrical tank having a conical shaped bottom for collecting sediment.

145. (New) The calcium chamber of claim 144, wherein a drain and valve may be located on the bottom of the tank to allow sediment to be periodically removed, and further wherein a clear section of pipe may be employed between the drain and the valve to allow visual inspection of the drain so that sediment buildup may be monitored.

146. (New) A bio-filter for reducing ammonia to nitrite and nitrite to nitrate, the bio-filter comprising

a tank containing media capable of supporting aerobic bacteria;

a pump for generating a forced flow of water;

a mixing eductor for mixing a gas including oxygen with water in the tank, wherein the mixing eductor includes an inlet channel for introducing the forced flow of water from the pump into the tank, a mixing channel having a flared inlet region positioned near the inlet channel in a manner which allows water from inside the tank to be entrained into the mixing channel and a flared outlet region through which the forced flow of water and gas is directed into the tank, and a flow path for introducing the gas including oxygen from outside the tank into the mixing channel to form a mixture of water and gas bubbles.

147. (New) The bio-filter of claim 146, wherein the lower portion of the tank has a tapered shape to allow for collection of sediment which settles to the bottom.

148. (New) The bio-filter of claim 147, wherein a drain and valve may be located on the bottom of the tank to allow sediment to be periodically removed, and further wherein a clear section of pipe may be employed between the drain and the valve to allow visual inspection of the drain so that sediment buildup may be monitored.

149. (New) The bio-filter of claim 146, wherein the media is chosen from sand, crushed coral and biofilm.

150. (New) A process for conditioning water in a contained environment for holding aquatic life, the process comprising:

providing a first stream of water from the contained environment to a bio-filter at a first flow rate, wherein the bio-filter reduces ammonia to nitrite and nitrite to nitrate;

providing a second stream of water from the contained environment to a denitration system at a second flow rate, wherein the denitration system includes one or more chambers containing anaerobic bacteria for substantially reducing the level of nitrates in the water; and

returning the first and second streams to the environment for holding aquatic life.

151. (New) The process of claim 150, wherein the denitrification system employs a chamber containing aerobic bacteria which reduces the oxygen concentration of the water in the second stream before the water is introduced to the one or more chambers containing anaerobic bacteria.

152. (New) The process of claim 150, wherein the denitrification system employs one or more chambers containing calcium for adjusting the pH of the second stream of water after the second stream exits the chamber containing anaerobic bacteria.

153. (New) The process of claim 150, wherein the second stream of water is provided to the bio-filter after the water exits the denitration system.

154. (New) The process of claim 150, comprising the additional step of providing both the first stream of water from the bio-filter and the second stream of water from the denitration system to an oxytower, wherein the first and second streams are combined together before being returned to the to the environment for holding aquatic life.

155. (New) The process of claim 154, wherein the oxytower comprises an enclosure for accepting a flow of water, the enclosure having side walls that slope inward at an angle θ_{oxy} from vertical; and wherein a medium is placed on the inner surface of the sidewalls and serves as support for the growth of algae in the oxytower, and further wherein the flow of water flows down the side walls while contacting the algae in a manner which allows the algae to effectively remove contaminants from the water and raise the pH of the water.

156. (New) The process of claim 154, further comprising the step of reducing the sulfate concentrations in the second stream of water after the second stream leaves the denitration chamber and before the second stream flows to the oxytower.

157. (New) The process of claim 154, wherein the step of reducing the sulfate concentrations is achieved by introducing the water to a desulfator, the desulfator including an enclosure for accepting a flow of water, wherein the enclosure contains a media on which anaerobic photosynthetic bacteria

are supported, and further wherein the water flows through the enclosure while contacting the media in a manner which effectively reduces sulfate levels.

158. (New) The process of claim 157, wherein the bacteria comprise at least one bacteria chosen from Chromatium vinossum, Thiospirillum jenense, Rhodospirillum rubrum, Rhodobacter sphaeroides, Chlorobium limicola, and Prosthecochloris aestuarii.

159. (New) The process of claim 154, further comprising the step of providing the first stream of water to a protein skimmer after the first stream leaves the bio-filter chamber and before the first stream is provided to the oxytower.

160. (New) The process of claim 159 wherein the protein skimmer includes an enclosure for accepting a flow of water, a mixing eductor within the enclosure, and a pump for introducing a forced flow of water to the mixing eductor, the mixing eductor including a first flow path for accepting the forced flow of water from the pump, a second flow path for entraining water from the enclosure of the protein skimmer, and a third flow path for accepting a flow of gas including oxygen from outside the enclosure, the mixing eductor in operation mixing the forced flow of water, the entrained water and the gas within the enclosure.

161. (New) The process of claim 154, further comprising the step of adjusting the temperature of the combined first and second streams from the oxytower.

162. (New) The process of claim 154, further comprising the step of sterilizing the water of the combined first and second streams from the oxytower to kill microorganisms.

163. (New) The process of claim 154, further comprising the steps of

flowing water from the environment for holding aquatic life to a filter to remove particulates from the water; and then

flowing the water from the filter to a sump, where the water may be held until it is pumped to the bio-filter and the denitration system.

164. (New) The process of claim 150, further comprising the step of filtering the second stream of water before it is provided to the denitration system.

165. (New) The process of claim 150, further comprising monitoring the properties of the water in the environment for holding aquatic life and controlling the process for conditioning water based on feedback received from the monitoring.

166. (New) The process of claim 150, wherein the first and second streams are returned from the bio-filter and denitration system to the environment for holding aquatic life by force of gravity.

167. (New) The process of claim 150, comprising the additional step of providing the first stream of water from the bio-filter and the second stream of water from the denitration system to a protein skimmer, wherein the first and second streams are combined together before being returned to the to the environment for holding aquatic life.

168. (New) The process of claim 167, further comprising the step of reducing the sulfate concentrations in the second stream of water after the second stream leaves the denitration chamber and before the second stream is provided to the protein skimmer.

169. (New) The process of claim 161, further comprising the step of providing the first stream of water from the bio-filter to an oxytower before the first stream of water is provided to the protein skimmer.

170. (New) The process of claim 154, further comprising the step of providing the combined first and second streams of water from the oxytower to a protein skimmer before returning the first and second streams to the environment for holding aquatic life.

171. (New) The process of claim 150, further comprising the step of providing a portion of the first stream of water from the bio-filter to a protein skimmer.

172. (New) The process of claim 171, further comprising the remaining portion of the first stream of water from the bio-filter to an oxytower, the protein skimmer and oxytower being arranged in parallel.

173. (New) A chamber for providing calcium to an aquatic environment, the chamber comprising

a container comprising an upper section, a middle section, and a lower section separated by first and second perforated shelves positioned within the chamber, so that said first shelf is positioned horizontally within the chamber to separate the upper section from the middle section, and the second shelf is positioned horizontally within the chamber and below the first shelf so as to separate the middle section from the lower section;

wherein the upper section of the chamber contains activated carbon and the middle section contains calcium media;

and further wherein an inlet and outlet of the chamber are positioned so that water is capable of entering the container near the top of the middle section of the first chamber and flowing down through the calcium media.

174. (New) The chamber of claim 173 wherein the middle section further contains activated carbon, the activated carbon being positioned in an upper portion of the middle section and the calcium media being contained in the lower portion of the middle section, the inlet being positioned so that water running through the chamber would contact both the activated carbon and the calcium media.

175. (New) The chamber of claim 173, wherein the calcium media comprises a first and second source of calcium, wherein the first source is different from the second source.

176. (New) The chamber of claim 175, wherein the first source is calcite and the second source is crushed coral, and further wherein the calcite is contained in a water permeable bag surrounded by the crushed coral.

177. (New) The chamber of claim 175, wherein the first source is less soluble in water than the second source, and further wherein the first source is contained in a volume of the middle section which is nearer to the inlet than the second source.

178. (New) The protein skimmer of claim 95, further comprising a concave surface positioned in the stream of the forced flow of water from the mixing eductor for redirecting the flow of water and bubbles within the chamber.

179. (New) The protein skimmer of claim 95, further comprising a collecting cup near the top of the chamber for collecting contaminants brought to the surface of the water by the bubbles.